（if a English version is needed, please let me know）

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1) □□□ AlphaGo Zero □ superhuman □□□

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2) □ natural language process (NLP) □□ Chinese room argument □□□

3) □□ The Selfish Gene (The Immortal Gene) □□□□□□□□□□

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□□**AlphaGo Zero 到 Superhuman，Quantum Supremacy 的挑戰**

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[1] Mastering the game of Go without human knowledge, published in Nature, on 18 October 2017: https://www.nature.com/articles/nature24270.

[2] Quantum supremacy using a programmable superconducting processor, published in Nature, on 23 October, 2019: https://www.nature.com/articles/s41586-019-1666-5

[3] https://www.quantamagazine.org/john-preskill-explains-quantum-supremacy-20191002/.